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**Patent Abstracts of Japan**

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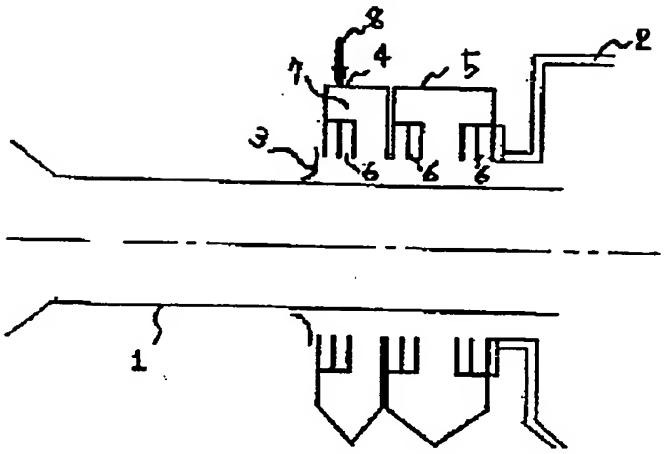
TITLE : SEALING DEVICE FOR ROTARY KILN




ABSTRACT : PROBLEM TO BE SOLVED: To process powder at high temperature by providing a flexible lip- shaped sealing plate which can allow the eccentric rotation of a core tube all around the core tube, between a collar-shaped inner hole and the outside periphery of the core tube.

SOLUTION: This device is provided with a collar-shaped part 4 which is fitted loosely around a core tube 1 and besides has space 7 for supplying sealing gas 8 equally to the free setting part, and is provided with a flexible lip-shaped seal plate 3 all around the core tube 1 so that it may allow the eccentric rotation of the core tube 1. As the quality of the seal plate 3, the material such as metal, high polymer, etc., can be selected properly, taking the heat resistance to the surface temperature of the core tube 1 into consideration. As the seal gas 8, air nitrogen, or the like can be selected properly, according to the conditions on operations of a rotary furnace. Hereby, the sealing property can be improved not only for the gas but also for the scattered substance such as powder, etc.

**Ceramic fibre heating tunnel longitudinal seal**
**E 103 0271 EP**

**US 4 728 289 A (SAMERA JR EDWARD)**

This concerns a directly heated rotary kiln with metallic sealing elements which are axially welded to the tubes in a non-separable manner.
Within kiln rotation, they allow for a well-intended stream of undergrate air into the combustion zone through the perforated drum jacket in cycles.
The overgrate air, which is needed for combustion, flows through the perforated rotary kiln jacket at a constant flux.

An axially disposed support element has arranged thereon adjustable lamellae made of a spring steel which, in an interaction with the sealing segments attached to the tubes, constitute the sealing element proper. During operation, these components are subjected to heavy wear because of their metallic construction and need to be exchanged at more or less short intervals.

This way of sealing is useful for a temperature range up to a maximum of 450°F, a mixed construction (an axial/radial arrangement) having a static portion and a rotary portion.

**DE 14 51 511 A (KOPPERS WISTRA OFENBAU)**

This also concerns a directly heated rotary kiln in which solid feed material undergoes combustion. In this case, the sealing elements are in an axial/radial arrangement and the pre-heated combustion air needed for combustion is passed over them to the material requiring combustion via grate openings.
Merely two sealing elements are provided in the area of the rotating material requiring combustion to achieve a well-intended inflow of the combustion air.

**DE 32 36 561 A (METALLGESELLSCHAFT AG)**

This concerns a seal for the directly heated rotary kiln at the junctions with the charging and discharging heads. The sealing brushes illustrated in the sketches are radially disposed on the rotary drum and are intended to cause a seal between the drum and heads. Their function is not identical by any means to that of the heating tunnel intermediate wall head seal of an indirectly heated rotary kiln.

**PATENT ABSTRACTS OFJAPAN 10300358**

This concerns a radially disposed seal of a labyrinth design for a transition between the rotary kiln which is indirectly heated by induction and the charging and discharging heads required.
The sealing elements are composed of a static portion and a rotary portion.
The rotary kiln does not possess a classical heating tunnel as that of the VTA version because it is indirectly heated. It does not produce fuel gases that would have to flow around the rotary kiln and, thus, does not require any forced flow path including an intermediate wall.
There is no interconnection with or similarity to the VTA patent regarding the essence and type of the seal.